

# Lecture Notes 3: Cascading Style Sheets (CSS)

CSE 190 M (Web Programming), Spring 2007  
University of Washington

Reading: Sebasta Ch. 3 sections 3.1 - 3.2, 3.4 - 3.6.6, 3.8 - 3.9



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## The bad way to produce styles in a web page

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```
<p><font face="Arial">Welcome to Greasy Joe's. You will  
<b>never, <i>ever, <u>EVER</u></i></b> beat our  
<font size="+1" color="red">AMAZING</font> prices!</font></p>
```

Welcome to Greasy Joe's. You will **never, ever, EVER** beat our **AMAZING** prices!

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- the above tags such as `b`, `i`, `u`, and `font` are legal in older HTML but are deprecated in strict XHTML
  - you should not use the above tags on your homework assignments!
- why are we discouraged from expressing stylistic information this way?

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## Cascading Style Sheets (CSS)

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- describe the appearance, layout, and presentation of information on a web page (as opposed to HTML, which describes the content of the page)
- describe *how* information is to be displayed, not *what* is being displayed
- can be embedded in HTML document or placed into separate `.css` file
  - advantage of `.css` file: one style sheet can be shared across many HTML documents

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## Basic CSS rule syntax

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```
selector {  
  property: value;  
  property: value;  
  ...  
  property: value;  
}
```

```
p {  
  font-family: sans-serif;  
  color: red;  
}
```

- 
- a CSS file consists of one or more rules
  - each rule starts with a selector that specifies an HTML element and then applies style properties to it

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## Attaching a CSS file: link

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```
<link rel="stylesheet" type="text/css" href="filename" />
```

```
<link rel="stylesheet" type="text/css" href="style.css" />
```

```
<link rel="stylesheet" type="text/css"  
href="http://www.google.com/uds/css/gsearch.css" />
```

- 
- the link tag appears in the head of an HTML page
  - can link to multiple style sheet files
    - in case of a conflict (two sheets define a style for the same HTML element), the latter sheet's properties will be used

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## CSS properties for colors

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```
p {  
  color: red;  
  background-color: yellow;  
}
```

This paragraph uses the style above.

- 
- color: color of the element's text
  - background-color: color that will appear behind the element

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## Specifying colors

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```
p { color: red; }
h2 { color: rgb(128, 0, 196); }
h4 { color: #FF8800; }
```

This paragraph uses the first style above.

This heading uses the second style above.

This heading uses the third style above.

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- color names: aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, (white), yellow
  - RGB codes: red, green, and blue values from 0 (none) to 255 (full)
  - hex codes: RGB values in base-16 from 00 (0, none) to FF (255, full)
- 

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## CSS properties for fonts

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- font-family: which font will be used
  - font-size: how large the letters will be drawn
  - font-style: used to enable/disable italic style
  - font-weight: used to enable/disable bold style
  - Complete list of font properties
- 

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## The font-family property

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```
p { font-family: "Georgia"; }
h2 { font-family: "Arial Narrow"; }
```

This paragraph uses the first style above.

This heading uses the second style above.

---

- enclose multi-word font names in quotes

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## More about `font-family`

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```
p { font-family: "Garamond", "Times New Roman", serif; }
```

This paragraph uses the above style.

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- can specify multiple fonts from highest to lowest priority
- generic font names:  
  *serif*, *sans-serif*, *cursive*, *fantasy*, *monospace*
- if the first font is not found on the user's computer, the next is tried
- generally should specify similar fonts
- placing a generic font name at the end of your `font-family` value ensures that every computer will use a valid font

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## The `font-size` property

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```
p { font-size: 14pt; }
```

This paragraph uses the style above.

---

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## More about `font-size`

---

```
p { font-size: x-large; }
```

This paragraph uses the above style.

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- vague font sizes: `xx-small`, `x-small`, `small`, `medium`, `large`, `x-large`, `xx-large`
- relative font sizes: `smaller`, `larger`
- percentage font sizes, e.g.: `90%`, `120%`
- units: pixels (`px`) vs. point (`pt`) vs. m-size (`em`)  
  `16px`, `16pt`, `1.16em`
- `px` specifies a number of pixels on the screen (absolute)
- `pt` specifies number of *point*, where a point is 1/72 of an inch onscreen
- `em` specifies number of *m-widths*, where 1 `em` is equal to the font's current size

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## font-weight, font-style

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```
p {
  font-weight: bold;
  font-style: italic;
}
```

*This paragraph uses the style above.*

---

- either of the above can be set to `normal` to turn them off (e.g. headings)
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## Body styles

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```
body { font-size: 16px; }
```

- to apply a style to the entire body of your page, write a selector for the `body` element
  - saves you from manually applying a style to each element
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## Practice Problem

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**KITTENS!**



Edit this HTML and add the following styles to it:

- entire page should have a pink background and use 16 point font
- main heading should use Comic Sans MS font
- lists should appear in a Lucida Console font
- list numbers should have yellow background; list items should have green background
- link text should be purple
- quote text should be italicized

### Why I love them:

1. They are *little*.
2. They make **adorable** sounds:
  - "Meow!"
  - "Purr!"
3. JUST LOOK AT THEM!

Show HTML

Show Expected Appearance

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# Why are `strong`, `em` better than `b`, `i`?

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```
strong { font-weight: normal; color: red; }
em { font-style: normal; background-color: #DDDDDD; }
```

Now if I want to **strongly emphasize** something or just **emphasize** it, it doesn't necessarily have to be bold or italic.

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- `strong` and `em` describe attributes of the content (it is something important in the document that you want to emphasize)
  - `b` and `i` describe formatting and presentation ("I want this to be bold.")
- 

# CSS properties for text

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- `text-align`: alignment of text within its element
  - `text-decoration`: decorations such as underlining
  - `line-height`, `word-spacing`, `letter-spacing`: gaps between the various portions of the text
  - `text-indent`: indents the first letter of each paragraph
  - [Complete list of text properties](#)
- 

## text-align

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```
blockquote { text-align: justify; }
h2 { text-align: center; }
```

### The Emperor's Quote

[TO LUKE SKYWALKER] The alliance... will die. As will your friends. Good, I can feel your anger. I am unarmed. Take your weapon. Strike me down with all of your hatred and your journey towards the dark side will be complete.

---

- `text-align` can be `left`, `right`, `center`, or `justify` (which widens all full lines of the element so that they occupy its entire width)

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## text-decoration

---

```
p { text-decoration: underline; }
```

This paragraph uses the style above.

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- can also be overline, ~~line-through~~, blink
- effects can be combined:

```
text-decoration: overline underline;
```

---

## CSS properties for dimensions

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```
p { width: 400px; background-color: yellow; }
h2 { width: 50%; background-color: aqua; }
```

This paragraph uses the first style above.

**This heading uses the second style above, keeping it in the left half of the page.**

---

- width, height: how wide or tall to make this element
  - max-width, max-height, min-width, min-height: the maximum or minimum size of this element in the given dimension
  - Complete list of dimension properties
- 

## Comments: /\* ... \*/

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```
/* This is a comment.
   It can span many lines in the CSS file. */
p { color: red; background-color: aqua; }
```

---

# Grouping styles

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```
p,h1,h2 { color: blue; }  
h2 { background-color: yellow; }
```

This paragraph uses the above style.

**This heading uses the above style.**

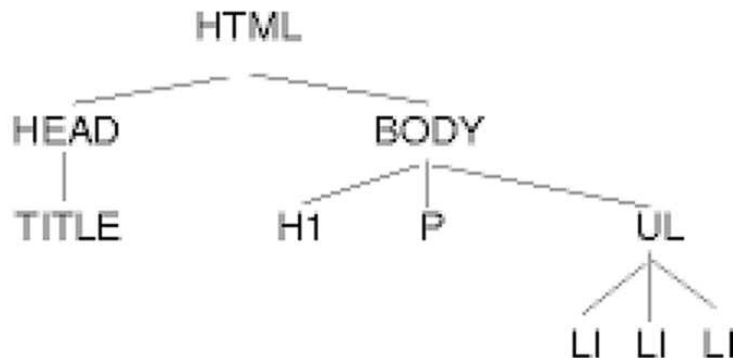
---

- a style can select multiple elements separated by commas
  - the given properties will be applied to all of the elements
  - the individual elements can also have their own styles (like h2 above)
- 

# Document tree

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```
<html><head><title>My home page</title></head>  
<body><h1>My home page</h1>  
<p>Let me tell you about my favorite composers:</p>  
<ul><li>Elvis Costello</li>  
<li>Johannes Brahms</li>  
<li>Georges Brassens</li>  
</ul></body></html>
```





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## Inheriting styles

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```
body { font-family: sans-serif; background-color: yellow; }
p { color: red; background-color: aqua; }
a { text-decoration: overline underline; }
h2 { font-weight: bold; text-align: center; }
```

**This is a heading.**

A styled paragraph. [Previous slides](#) are available on the web site.

- a bullet list

- 
- when multiple styles apply to an element, they are inherited
  - a more tightly matching rule can override a more general inherited rule
  - not all properties are inherited (notice link's color above)

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## Styles that conflict

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```
p,h1,h2 { color: blue; font-style: italic; }
h2 { color: red; background-color: yellow; }
```

*This paragraph uses the first style above.*

***This heading uses both styles above.***

- 
- when two styles set conflicting values for the same property, the latter style takes precedence

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## W3C CSS Validator

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```
<p><a href="http://jigsaw.w3.org/css-validator/check/referer">
</a></p>
```



- [jigsaw.w3.org/css-validator/](http://jigsaw.w3.org/css-validator/)
- checks your CSS to make sure it meets the official CSS specifications
- more picky than the web browser, which may render malformed CSS correctly

# Practice Problem

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**KITTENS!**



Edit the previously-styled Kitten HTML and add the following styles:

- all headings should be centered, bolded, and underlined
- the images should be enlarged to occupy one-third of the screen each
- the list of items should be narrowed to occupy only half the page width
- the text should be spaced so that the lines are further apart
- emphasized and strongly emphasized text should appear slightly larger than the other text on the page

## Why I love them:

1. They are *little*.
2. They make **adorable** sounds:
  - "Meow!"
  - "Purr!"
3. JUST LOOK AT THEM!

Show HTML

Show Expected Appearance